

Author: [ADVANCED](#)

Volume Page

Keyword: [TOP](#) > [Available Issues](#) > [Table of Contents](#) > [Abstract](#)

ONLINE ISSN : 1881-1361

PRINT ISSN : 0287-4547

Dental Materials Journal

Vol. 26 (2007) , No. 4 p.526-533

[\[PDF \(394K\)\]](#) [\[References\]](#)**Mechanical Behavior of Glass Ionomer Cements as a Function of Loading Condition and Mixing Procedure**[Nicoleta ILIE](#)¹⁾ and [Reinhard HICKEL](#)¹⁾

1) Dental School of the Ludwig-Maximilians University

(Received November 27, 2006)

(Accepted March 8, 2007)

Abstract:

With a view to comparing conventional (CGIC) and resin-modified glass ionomer cements (RMGIC) in terms of mechanical properties, these materials were subjected to different loading conditions for evaluation. In addition, this study investigated the assumption that capsulated systems possess superior mechanical properties compared to the hand-mixed systems, owing to the former's better material homogeneity and a more precise adjustment of the powder-liquid ratio.

In view of the aims of this study, the following mechanical properties were determined: strength and modulus of elasticity in flexural test, diametric tensile and compressive strengths, as well as variation of hardness and modulus of elasticity with depth.

In all macroscopic strength tests, the RMGICs performed significantly better than the CGICs. In microhardness evaluation, the differences were levelled out. In particular, the mechanical properties of RMGICs were comparable to those of microfilled and packable composites.

The effect of mixing was closely intertwined with material property. The tested CGICs performed better when they were hand-mixed, whereas RMGICs fared better in the capsulated form.

Key words:[Glass ionomers](#), [Mechanical properties](#), [Mixing systems](#)



[\[PDF \(394K\)\]](#) [\[References\]](#)

Download Meta of Article [\[Help\]](#)

[RIS](#)

[BibTeX](#)

To cite this article:

Nicoleta ILIE and Reinhard HICKEL. Mechanical Behavior of Glass Ionomer Cements as a Function of Loading Condition and Mixing Procedure . Dent. Mater. J. 2007; 26: 526-533 .

doi:10.4012/dmj.26.526

JOI JST.JSTAGE/dmj/26.526

Copyright (c) 2009 The Japanese Society for Dental Materials and Devices



[Japan Science and Technology Information Aggregator, Electronic](#)

